Isolated and Combined effects of Yogic practices and Aerobic Exercise on Flexibility among College Women Basketball players

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ABSTRACT

To achieve the purpose of this study the investigator selected sixty college women Basketball players from affiliated colleges of University of Madras, Chennai, Tamilnadu. The subjects were selected randomly and their age was between 18 to 21 years. They were assigned into four groups of which one group served as yogic practice group, second group served as aerobic exercise group, third group combined aerobic exercise and yogic practice group and the fourth group acted as control group. The training programmes for this study were six weeks yogic practice for experimental group I and six weeks aerobic exercise for group II, six weeks combined aerobic exercise and yogic practice for experimental group III and the control group was not given any training except of their routine. The selected subjects were measured of their flexibility by Sit and Reach Text before and after the training period of six weeks. The differences between the initial and final scores of flexibility were subjected to statistical treatment using Analysis of Covariance (ANCOVA).The results of this study proved that comparing with control group the experimental groups significantly improved on the flexibility. The results further revealed that comparing with other groups, combined group significantly improved their performance. It was concluded that combined aerobic exercise and yogic practice group was better than yogic practice group, aerobic exercise and control group in improvement of flexibility. It was concluded that yogic practice group was significantly better than control group in increasing the flexibility of basketball players.

Keyword: Yoga, aerobic exercise, Motor fitness components, Flexibility, Physical Fitness.

INTRODUCTION

The purpose of the study was to find out the isolated and combined effects of yogic practice and aerobic exercise on flexibility among college Basketball players. To facilitate the study 60 college women Basketball players from affiliated colleges of University of Madras, Chennai, Tamilnadu. The subjects were randomly selected as subjects and their age ranged between 18 to 21 years. The selected women Basketball players were assigned into four groups of which one group served as yogic practice groups (I), second group served as aerobic exercise group(II), the third group as combined aerobic exercise and yogic exercise group(III) and the fourth one acted as control group(IV). Tran et.al (2001) conducted a study on 10 healthy, untrained volunteers (nine females and one male), age ranging from 18-27 years, to determine the effects of Hatha yoga practice on health-related aspects of physical fitness, including muscular strength and endurance, flexibility, cardio respiratory fitness, body composition, and pulmonary function. The subjects were evaluated before and after the 8-week training program. Isokinetic muscular strength for elbow extension, elbow flexion, and knee extension increased by 31%, 19%, and 28% ($p<0.05$), respectively, whereas isometric muscular endurance for knee flexion increased 57% ($p<0.01$). Ankle flexibility, shoulder elevation, trunk extension, and trunk flexion increased by 13% ($p<0.01$), 155% ($p<0.001$), 188% ($p<0.001$), and 14% ($p<0.05$), respectively. These findings indicated that regular Hatha yoga practice can elicit improvements in the health-related aspects of physical fitness.

OBJECTIVES OF THE STUDY:

Researches show that the yogic practices significantly improve flexibility and there are researches to prove that aerobic exercise significantly influences flexibility. The objective of this study was to compare the isolated and combined effects of yogic practice and aerobic exercise on flexibility. Thus the objectives made for this study are as follows;

- To find out the isolated effect of yogic practice on flexibility among college women Basketball players.
- To find out the isolated effect of aerobic exercise on flexibility among college Women Basketball players.

- To find out the combined effects of yogic practice and aerobic exercise on flexibility among College women Basketball players.

STATEMENT OF THE PROBLEM:

The purpose of the study was to find out the isolated and combined effects of yogic practices and aerobic exercise on flexibility among college women Basketball players.

PROCEDURE:

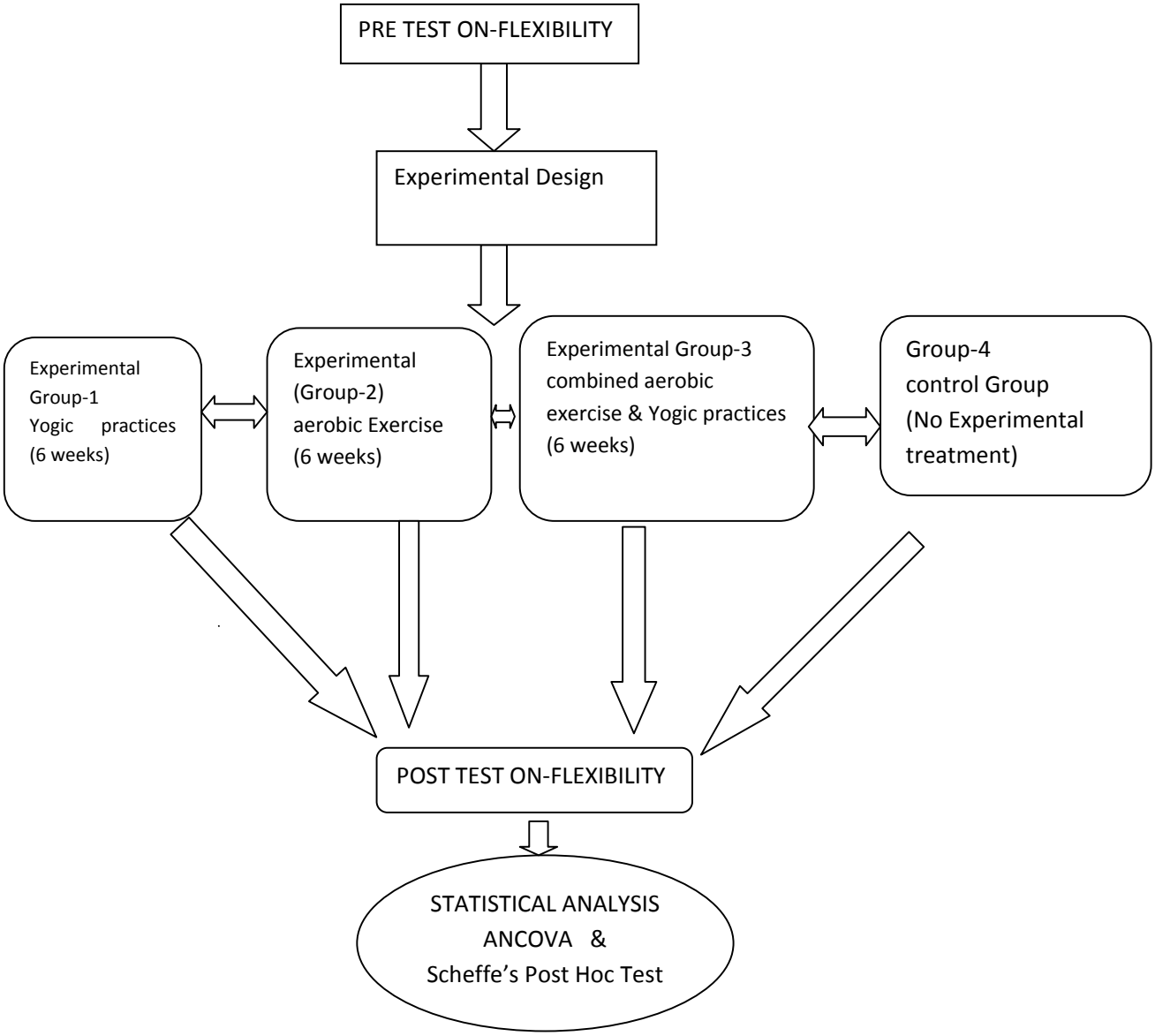
The study was formulated as a true random group design, consisting of pre-test and post-test. The subjects (n=60) were randomly assigned into four equal homogeneous groups of 15 basketball players each. Among the four groups, the control group was strictly under control, without undergoing any specific activity. The experimental groups were undergone with the experimental treatments. The groups were assigned as Experimental Groups I, II, III and control group respectively. Pre tests were conducted for all the selected subjects on flexibility by sit and reach test.

TRAINING SCHEDULE

The experimental groups participated in their respective yogic practice, aerobic exercise, and combined aerobic exercise and yogic practice for a period of six weeks. The training programme was scheduled at 6.30 a.m. to 7.30 a.m. on all week days except Sundays. The posts were done on the selected dependent variable after six weeks.

STATISTICAL ANALYSIS;

The differences between the initial and final test scores on flexibility were subjected to statistical treatment using Analysis of Covariance (ANCOVA) to find out whether the mean differences were significant or not. The Scheffe's post hoc test was used to find out the paired means significant differences.



RESULT AND DISCUSSION ON FINDINGS

Results on Flexibility The statistical analysis comparing the initial and final means of flexibility due to isolated and combined effect of yogic practice and aerobic exercise on motor fitness variable, flexibility is presented in Table I.

TABLE I

COMPUTATION OF ANALYSIS OF COVARIANCE OF FLEXIBILITY

	Yogic practice	Aerobic exercise	Combined yogic & aerobic exercise	Control group	Sources of variance	Sum of squares	Df	Mean squares	Obtained f
Pre test Mean	23.20	23.45	23.83	24.42	Between	11.738	3	3.913	5.022*
					Within	43.628	56	779	
Post test Mean	23.41	25.46	26.19	24.28	Between	75.007	3	25.002	23.159*
					Within	60.475	56	1.080	
Adjusted post test Mean	23.68	25.71	26.11	23.68	Between	75.535	3	25.178	51.664*
					Within	26.804	55	.487	
Mean diffs	0.21	2.26	2.28	0.14					

F-ratio significant Table at 0.05level of confidence for 3 and 56(df) is=2.77.

The obtained F value on flexibility of post-test means 23.159 was greater than the required F value 2.77, which proved that the interventional programmes, yogic practice and aerobic exercises were significantly improved flexibility of women Basketball players. Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F value 51.664 was greater than the required value of 2.77 and hence it was accepted that the yogic practice, aerobic exercises and combination of yogic practices and aerobic exercise, significantly increased flexibility of the women Basketball players. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table II.

TABLE II

SCHEFFES CONFIDENCE INTERVALS TEST SCORES ON FLEXIBILITY

(Scores in Centimeters)

Means					
Yogic	Aerobic	Combined	Control	Mean difference	Required CI
23.68	25.71			-2.03	0.74
23.68		26.11		2.43	0.74
23.68			23.61	0.07	0.74
	25.71	26.11		0.40	0.74
	25.71		23.61	2.10	0.74
		26.11	23.61	2.5	0.74

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure I.

Figure 1

Column Graph on Ordered Adjusted Post Mean for Flexibility

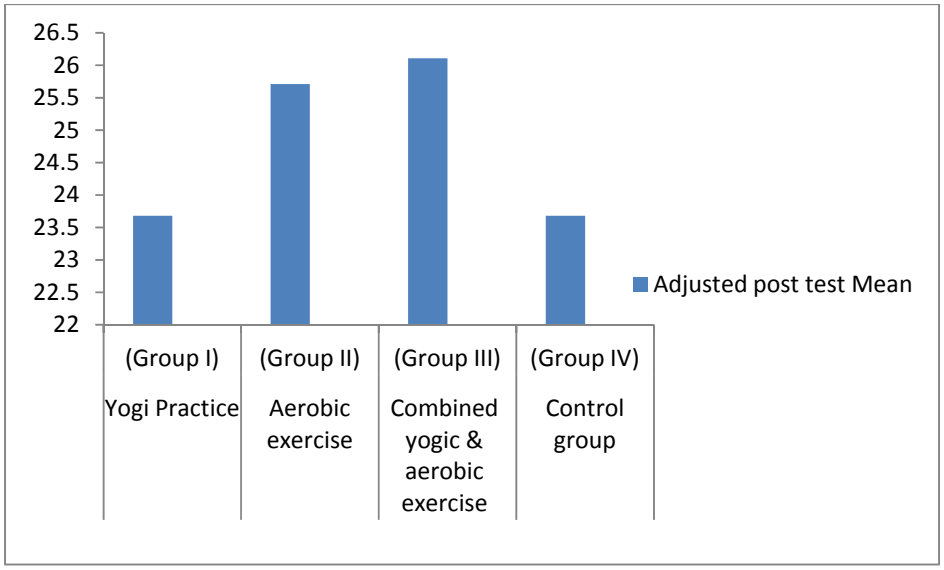


Table II further shows the post hoc analysis of obtained ordered adjusted means of the yogic pratice, aerobic exercise combined of yogic practice and aerobic exercise and control groups. From the results presented in Tables I and II it was proved that the interventional programme yogic practice, aerobic exercise and combination of yogic practice and aerobic exercises significantly increased flexibility of college women Basketball players. Analysis of adjusted means through Scheffe's post hoc test further proved that there was a significant differences existed between yogic practice group and aerobic exercise group, yogic practice group and combined (yogic practice and aerobic exercise) group, yogic practice group and control group, aerobic exercise group and control group, aerobic group and combined group, combined (yogic practice and aerobic exercise) group and control group. This proved that due to the influence of six weeks training on yogic practice, aerobic exercise and combined(yogic practice and aerobic exercise) groups significantly improved flexibility comparing to control group. It was also proved that combined (yogic practice and aerobic exercise) group has shown better performance in improving the flexibility of women Basketball players their practicing as an separate /isolated entity.

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CONCLUSIONS

1. It was concluded that combined aerobic exercise and yogic practice group has significantly better performance than yogic practices, aerobic exercise and control group in improving the flexibility.
2. It was also concluded that yogic practice group was significantly better than the control group in improving of flexibility among college women basketball players.
3. It was concluded that aerobic exercise group was significantly better than the control group in improving flexibility among college women basketball players.
4. It was further concluded that yogic practice group was significantly better than the aerobic exercise group in improving flexibility as measured through sit and reach test.

RECOMMENDATIONS

1 It is recommended that the coaches, physical educationists and sportspersons may include aerobic exercise and yogic practice in their training schedule to improve their fitness and physiological preparations for better performances.

2. It was recommended that people with irrespective of age may practice yoga and do aerobic exercise, it possible, their fitness lead a life health.

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